

Reply to Office Action of October 04, 2004
Amendment Dated: November 22, 2004

Appl. No.: 09/824,837
Attorney Docket No.: CSCO-004/3579

REMARKS

Claims 1-32 were presented for consideration in the application as originally filed.

5 All the presented claims were rejected under 35 U.S.C. § 103. By virtue of this amendment, new claims 33-41 are sought to be added and claims 1, 6, 10, 13, 17, 22, 24 and 28 are sought to be amended to further define the invention. The specification is sought to be amended to fix various typographical errors. The additions and amendments are believed not to introduce new subject matter, and their entry is respectfully requested.

10 Claims 1-41 are thus presented for consideration. Reconsideration is respectfully requested further in view of the below remarks.

Claim Rejections - 35 U.S.C. § 103

Claims 1-32 have been rejected under 35 U.S.C. 103 (a) as being unpatentable over United States Patent Number 6,185,210 issued to Troxel (hereafter "Troxel") in view of US
15 Published Application number 2003/0007455 issued to Kohzuki ("Kohzuki"). Applicant traverses rejections for reasons noted below.

It is asserted that Troxel and Kohzuki, neither individually nor together, teach or suggest one or more features currently amended claim 1. Amended claim 1 recites in relevant parts:

20 1. (Currently Amended): A method of providing different quality of services (QOS) to different layer-3 datagrams to be transported from a first network device to a second network device connected by a backbone, *each of said first network device and said second network device operating as a layer-3 device*, said method comprising:

25 provisioning a tunnel in said first network device, said tunnel terminating at said second network device via said backbone, said tunnel being implemented to provide different QOS to different packets depending on a packet header for the corresponding packet;

30 receiving a layer-3 datagram in said first network device, said layer-3 datagram containing a datagram header and a datagram data;

examining said datagram header in said first network device to determine a QOS to be provided to said layer-3 datagram;

35 forming at least one packet in said first network device by *encapsulating at least said datagram data with a layer-3 header, wherein said layer-3 header identifies said tunnel to said second network device*, said at least one packet containing a packet header to provide said QOS determined by said examining; and

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sending said at least one packet to said second network device on said tunnel,

whereby *layer-3 datagrams receive different QoS based on the corresponding datagram headers.*

(Amended Claim 1, *Emphasis Added*)

From the above, it may be appreciated that a method in accordance with claim 1 relates to providing different QoS when transporting packets between two layer-3 (e.g., Internet Protocol) devices. A tunnel is provisioned between the two layer-3 devices, with the tunnel having the ability to provide different QoS to different packets.

When a layer-3 datagram is received, at least the datagram data is encapsulated with a layer-3 header, which identifies the tunnel to the second network device. The use of tunnels may provide benefits such as assigning non-unique global layer-3 (e.g., IP) addresses to at least some end devices. In addition, by identifying the tunnel in a layer-3 header, the tunnel can be provided over different and potentially several lower level transports (ATM, UDP/IP, Frame Relay).

In addition to such benefits, the method of claim 1 provides different QoS to different layer-3 datagrams while transporting the packets on the tunnel provided between the two layer-3 network devices. The tunnel is designed to provide different QoS, and the specific QoS for a received layer-3 datagram is determined based on the header of the received layer-3 datagram.

It is now pointed out that the references of record, either alone or in combination, do not teach or suggest the combination of encapsulating at least a portion of a received layer-3 datagram with a layer-3 header identifying a tunnel provided between two layer-3 network devices, and providing different QoS to different layer-3 datagrams based on the ability of the tunnel to provide different QoS. The basis for such an assertion is noted below with respect to the primary references Troxel and Kohzuki relied upon in the Outstanding Office Action.

With respect to Troxel, it was stated in the Outstanding Office Action that, "... , provisioning a tunnel (col. 10, *tunnel reads on merely encapsulating into a lower layer protocol for transmission*, and clearly reads on *IP over ATM, point to point ATM* network over fibers, col. 4, lines 54-59), ..." (Paragraph number 2, lines 7-12 of Outstanding Office Action).

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Even assuming arguendo that IP over ATM reads on a tunnel as asserted by the Examiner, it is noted that transporting IP packets over ATM merely requires encapsulation by ATM header, which is at layer-2. There does not appear to be disclosure or suggestion in Troxel to encapsulate IP packets with a layer-3 header, which identifies the tunnel (as recited in amended claim 1).

5 Kohzuki does not fill that deficiency either. Kohzuki relates to traffic shaping in the context of transmitting ATM cells and discloses forwarding IP packets in the form of multiple ATM cells. However, there does not appear to be any disclosure to encapsulate an IP packet (or portion thereof) by a layer-3 header (which would identify the tunnel) in Kohzuki.

10 Accordingly, it is respectfully submitted that claim 1, at least as amended, is allowable over the art of record. It is respectfully noted that the Patent Office has the burden of establishing a prima facie case, and the references do not establish such a case at least as against the presented claims. Accordingly, claim 1 is allowable over the art of record. Claims 2-9 are allowable at least as being dependent from an allowable base claim.

15 Claim 4 is independently allowable in that there would be a second level (the first level being at the layer-3, as recited in claim 1) of encapsulation according to ATM protocol when the packets are formed.

20 Claim 5 is independently allowable in that both the references of record relied upon in the Outstanding Office Action do not appear to disclose or suggest a tunnel implemented using UDP/IP. In addition, the references do not appear to suggest setting the TOS/Precedence field of the UDP/IP packet according to the datagram header of the received layer-3 datagram.

Claim 6 is also independently allowable in that the art of record does not disclose or suggest copying the TOS/precedence bits in a received IP datagram to the TOS/precedence field of the UDP/IP packet, such that the desired QoS (as indicated by the TOS/precedence field) is provided to the layer-3 datagram (IP packet) in the UDP/IP based tunnel.

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Claims 10-41 are also allowable at least for one or more of the reasons noted above. Therefore, Applicant respectfully submits that all the objections/rejections of record are believed to be overcome, and all the claims presented for consideration are allowable over the art of record.

- 5 The Examiner is invited to telephone the undersigned representative if it is believed that an interview might be useful for any reason.

Respectfully submitted,



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